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Benyou Jin

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EXAMINER

LEGESSE, HENOK D

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/533,074

Applicant(s)

JIN, BENYOU

Examiner

Henok Legesse

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/12/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Objection to the drawings is withdrawn, since the specification is amended to overcome the objection to the drawings.

Specification

2. The amendment to the specification filed on 07/12/2007 is accepted.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,2,3, and 5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fullemann (US 4,954,149).

Regarding claim 1, Fullemann teaches a seal ring [100] (fig.1A, 1B, 5; col.4, lines 26-28) comprising a tube-shaped, elastic part (fig. 1A, 1B, 5; col.6, lines 56-61) having an insertion opening [115] (fig.1A; col.4, lines 32-34) at one end for receiving an ink (fluid) supply needle [101] (fig.1B; col.4, line 55), and a sealing film [111] (fig.1A; col.4, line 31) having a crack [117] (fig.1A; col.4, line 34) connecting the insertion opening [115] to a space defined by an internal wall at another end of the tube-shaped, elastic part, (fig. 1A,1B) wherein the tube-shaped,

elastic part is provided with a symmetric support [107] (fig.1A, 1B; col.4, lines 37-43), one end of the support being located on the internal wall of the tube-shaped, elastic part, and another end of the support being located adjacent to the crack [117] in the sealing film [111] (see figs. 1A, 1B,2A,2B,5; in fig.5 side wall 525 accommodate symmetric support element 107 from the side opposite to the crack 117 col.6,lines 24-37. see also fig.7, symmetric support 703 of sealing ring 700 has vertical ribs 711 that extends between crack 709 and 701, col.7,lines 46-65).

Regarding claim 2, Fullemann further teaches the insertion opening [115] (fig.1A; col.4, lines 32-34) has a narrower portion (see fig.1A) having a diameter smaller than that of the ink supply needle [101] (col.5, lines 35-44).

Regarding claim 3, Fullemann further teaches wherein the narrower portion (the narrower portion of 115, fig. 1A) is formed by rings (see fig. 1A, 115 is formed with layers of concentric rings whose diameter decreases going to wards 117) which are axially spaced from the one end of the tube-shaped, elastic part (see figs. 1A,1B).

Regarding claim 5, Fullemann further teaches wherein a surface on which the crack [crack 709 of sealing ring 700] (fig.7; col.7, lines 45-46,50) is located overlaps with a surface of the symmetric support [703] (fig.7, col.7, lines 45-65).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6,7,8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fullemann (US 4,954,149) in view of Mochizuki et al.(US 6,045,207)

Regarding claim 6, Fullemann teaches, a seal ring, the seal ring [100,700] (figs.1A, 1B, 5,7; col.4, lines 26-28) comprising a tube-shaped, elastic part (see fig. 1A, 1B, 5; col.6, lines 56-61) having an external wall tightly connecting with an internal wall of outlet (col.6, lines 4-23, fig.3), an insertion opening [115] (fig.1A; col.4, lines 32-34) at one end for receiving an fluid supply needle [101] (fig.1B; col.4, line 55), and sealing film [111] (fig.1A; col.4, line 31) having a crack [117] (fig.1A; col.4, line 34) connecting the insertion opening [115] to a space defined by an interior wall at another end of the tube-shaped, elastic part, (figs.1A,1B) wherein the tube-shaped, elastic part includes a symmetric support [107,703] (figs.1A, 1B,7; col.4, lines 37-43), one end of the support being located on the internal wall of the tube-shaped, elastic part, and another end of the support being located adjacent to the crack [117] in the sealing film[111] (see figs. 1A, 1B,2A,2B, 5; in fig.5 side wall 525 accommodate symmetric support element 107 from the side opposite to the crack 117 col.6,lines 24-37. see also fig.7, symmetric

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support 703 of sealing ring 700 has vertical ribs 711 that extends between crack 709 and 701, col.7, lines 46-65).

Fullemann does not expressly teach the sealing ring [100,700] is provided in an ink cartridge comprising an ink outlet, which supplies ink from an internal ink chamber.

However, Mochizuki et al teaches ink cartridge [200] (fig.2; col.5, line 10) comprising an ink outlet [15] (fig.2; col.5, lines 15-17), which supplies ink from an internal ink chamber to the recording head [4], a sealing member 19 provided in side outlet 15 (fig.3; col.5, lines 33-48).

Since both Fullemann and Mochizuki et al teach seal-ring (packing member) for resiliently sealing fluid supply needle, it would have been obvious to one ordinary skill in the art at the time the invention was made to have used the seal-ring of Fullemann in the ink cartridge of Mochizuki et al because the septum of Fullemann has an aperture 117 with a symmetric support clip 107, 703 designed for reliable sealing to prevent fluid leakage much more efficiently (col. 4, lines 47-50 of Fullemann).

Regarding claim 7, Fullemann further teaches the insertion opening [115] (fig.1A; col.4, lines 32-34) has a narrower portion (see fig.1A) having a diameter smaller than that of the ink supply needle [101] (col.5, lines 35-44).

Regarding claim 8, Fullemann further teaches the narrower portion (the narrower portion of 115, fig. 1A) is formed by rings (see fig. 1A, 115 is formed with

layers of concentric rings whose diameter decreases going to wards 117) which are axially spaced from the one end of the tube-shaped, elastic part (see figs. 1A,1B).

Regarding claim 10, Fullemann further teaches wherein a surface on which the crack [crack 709 of sealing ring 700] (fig.7; col.7, lines 45-46,50) is located overlaps with a surface of the symmetric support [703] (fig.7, col.7, lines 45-65).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2,3,6,7,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barinaga et al. (US 6,702,434 B2) in view of Nip (US 2004/0001127).

Regarding claim 1, Barinaga et al teaches a seal ring [septum structure, 100] (fig.6, 7,8; col.3, lines 12-14) comprising a tube-shaped (see fig.6-7), elastic part (col.1, line 7) having an insertion opening [gland seal, 110] (fig.6-8; col.3, lines 18-25) at one end for receiving an ink supply needle [needle, 40] (fig.7; col.3, line 21), and a sealing film [slit membrane, 102] (fig.6-8; col.3, lines 16-18) having a crack [slit or opening, 104] (fig.6-8; col.3, lines 16-18) connecting the insertion opening [gland

seal, 110] to a space defined by an internal wall at another end of the tube-shaped, elastic part (figs.6-8).

Barinaga et al does not expressly teaches the elastic part is provided with a symmetric support, one end of the support being located on the internal wall of the tube-shaped, elastic part, and another end of the support being located adjacent to the crack in the sealing film.

However, Nip teaches a seal ring (3, figs.1-4) provided with a symmetric support (support rib 9), one end of the support (9) being located on the internal wall of the tube-shaped, elastic part, (10,see fig.2) and another end of the support being located adjacent to the crack (18, figs.1, 2,4) in the sealing film (15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the symmetric support ribs of Nip in the seal ring of Barinaga et al the motivation being to prevent fluid leakage much more efficiently during insertion and removal of supply needle (paragraph 0037 of Nip).

Regarding claims 2 and 7, Barinaga et al further teaches the insertion opening [110] has a narrower portion (see fig.8) having a diameter smaller than that of the ink supply needle [40]. (See fig.6, 7; col.3, lines 18-25; the gland seal acts as a redundant seal when the needle is engaged, fig.7, i.e. when the needle is not in engaged position, fig.6, the diameter of the narrower portion of the gland seal 110 is smaller than that of the needle 40, and when the needle is in engaged position, fig.7, the narrower portion of

the gland seal 110 stretches to accommodate the needle as the needle advances through it sealing the needle).

Regarding claims 3 and 8, Barinaga et al further teaches the narrower portion (the narrower portion of gland seal 110, fig. 6,8) is formed by rings (in the shape of cylindrical ring, see fig. 8) which are axially spaced raised from the one end of the tube-shaped, elastic part [110] (figs. 6-8).

Regarding claim 6, Barinaga et al as modified by Nip further teaches an ink cartridge [fluid supply, host part, 10] (fig.4; col.2, lines 65-67 of Barinaga et al) comprising an ink outlet (col.3, lines 1-5) which supplies ink from an internal ink chamber [reservoir, 11] (fig.4; col.3, line 3), wherein the ink outlet is provided with a seal ring [septum structure, 20] (fig.1-4; col.2, lines 65-66), the seal ring [20] comprising a tube-shaped, elastic part (fig.1-4; col.2, lines 30-48) having an external wall tightly connecting with an internal wall of the ink outlet (col.2, lines 9-11), an insertion opening [24] (fig. 3; col.2, lines 39-41) [gland seal, 110] (fig.6-8; col.3, lines 18-25) at one end for receiving an ink supply needle [40](fig.1; col. 2, line 16), and sealing film [slit membrane, 102] (fig.6-8; col.3, lines 16-18) having a crack [slit or opening, 104] (fig.6-8; col.3, lines 16-18) connecting the insertion opening [110] to a space defined by an interior wall at another end of the tube-shaped, elastic part (figs.6-8), wherein the tube-shaped, elastic part includes a symmetric support (support rib 9, figs.1,2 of Nip), one end of the support being located on the internal wall of the tube-shaped, elastic part (100, figs.6-8 of

Barinaga et al), and another end of the support being located adjacent to the crack [104] in the sealing film[102].

Response to Arguments

9. Applicant's arguments filed on 07/12/2007 have been fully considered but they are not persuasive.

Pertaining to applicant's argument regarding reference Fullemann and the amended claim 1, the applicant attention is respectfully directed to the rejection of claim 1 above.

Pertaining to applicant's argument regarding reference Barinaga and the amended claim 1, the applicant attention is respectfully directed to the rejection of claim 1 above, Barinaga in view of Nip.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henok Legesse whose telephone number is (571) 270-1615. The examiner can normally be reached on Mon - FRI, 7:30-5:00, ALT.FRI EST.TIME.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

H.L.

HL

9/29/2007



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